SYPHILIS AND EYE DISEASES:
A STUDY OF 100,000 CASE RECORDS

PREPARED BY JACOB A. GOLDBERG,
NEW YORK TUBERCULOSIS AND HEALTH ASSOCIATION

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A Study of 100,000 Case Records

Prepared by

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SOCIAL HYGIENE COMMITTEE
New York Tuberculosis and Health Association

Sub-Committee on Study of Syphilis and Eye Diseases
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SYPHILIS AND EYE DISEASES

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TABLE OF CONTENTS

Page
I - Introduction - 5
II - Organization of the Study - - - - - - - - - - - - - - - - - 8
III - Method of the Study - 10
Clinic A - 11
Clinic B - 16
Clinic C - 20
Clinic D - 24
Clinic E - 29
IV - Statistical Summary - 33
V - Summary and Conclusions - - - - - - - - - - - - - - - - - - 40
VI - Survey Form - 44

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LIST OF TABLES

Table I - Clinic A - Diagnoses - - - - - - - - - - - - - - - - - 14
Table Ia - Age Distribution of Pts.with Pos.Wass.at Clinic A 15
Table II - Clinic B - Diagnoses - - - - - - - - - - - - - - - - - 18
Table IIa - Age Distribution of Pts.with Pos.Wass.at Clinic B 19
Table IIb - Disposition of Cases at Clinic B - - - - - - - - - 20
Table III - Clinic C - Diagnoses - - - - - - - - - - - - - - - - - 22
Table IIIa - Age Distribution of Pts.with Pos.Wass.at Clinic C 23
Table IV - Clinic D - Diagnoses - - - - - - - - - - - - - - - - - 26
Table IVa - Age Distribution of Pts.with Pos.Wass.at Clinic D 27
Table IVb - Family History of Patients at Clinic D - - - - - - 28
Table IVc - Disposition of Cases at Clinic D - - - - - - - - - 28
Table V - Clinic E - Diagnoses - - - - - - - - - - - - - - - - - 31
Table Va - Age Distribution of Pts.with Pos.Wass.at Clinic E 32
Table VI - Summary of Eye Diseases with Possible Syphilitic Involvement in Five Institutions - - - - - - - 35
Table VIa - Percentage of Wassermann Tests with Positive Findings in Selected Diagnoses - - - - - - - - 36
Table VIb - Age Distribution of Patients with Positive Wassermanns in Five Clinics - - - - - - - - - - - 37
Table VII - Family History of Patients in Five Clinics - - - - 37
Table VIIa - Disposition of Cases with Pos.Wassermann Findings 38
Table VIII - Wassermann Findings in Families - - - - - - - - - - 39
Table IX - Analysis of the Total Cases of Five Clinics - - - 39

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SYPHILIS AND EYE DISEASES

A Study of 100,000 Case Records

The Social Hygiene Committee of the New York Tuberculosis and Health Association has been interested for some time in the place of syphilis as an etiological factor in certain defects of the eye. A preliminary study was undertaken of the literature dealing with the subject. Thereafter, arrangements were made to study the records of five representative institutions in New York City in which patients with eye disabilities were treated in fairly large numbers. This study was continued for the better part of a year and this report presents a summary of the findings.

The study as a whole has been under the direction of the Secretary, and under the general supervision of a special sub-committee. It is expected that further studies will be made from time to time as a follow-up of the current investigation.

W. Bayard Long, M.D., Chairman

Jacob A. Goldberg, Ph.D., Secretary

Sub-Committee on Study of Syphilis and Eye Diseases
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April, 1937.

SYPHILIS AND EYE DISEASES

Report on a Study of 100,000 Case Records
With Special Reference to the Prevention of Blindness
by

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Social Hygiene Committee
New York Tuberculosis and Health Association

I - INTRODUCTION

Syphilis has long been recognized as an important factor in the etiology of certain defects of the eye. However, before the introduction of the Wassermann reaction, statistics relating to syphilitic ocular affections were most variable. Since the introduction of the Wassermann reaction and similar reliable tests, a number of attempts have been made to obtain definite statistical data on the incidence of syphilis in the population as a whole, and on the influence of syphilis upon the development of certain types of eye diseases. Various studies made in New York and other communities indicate that approximately 10 per cent of the adult male population will, upon examination, reveal evidences of syphilis, either active or latent. Likewise, serologic tests on pregnant women indicate not less than 5 to 6 per cent of positive findings for syphilis. These figures apply primarily to white patients. Among Negroes the rate is considerably higher.

The relation of syphilis to blindness is a subject of which little is known. (The Causes of Blindness in Children - Conrad Berens, C. Edith Kerby, and Evelyn C. McKay, Journal, A.M.A., Dec. 14, 1935, Vol. 105, pp 1949-1954). Keyes has stated that a weighted average of prevalence in the United States, based on a compilation of existing material, with due emphasis on race, social and economic status, and geographical location, would strike a figure somewhere around 5 per cent as the average prevalence of syphilis in the United States at the present time.

(Keyes, E.L.: The Present Status of Venereal Disease Prophylaxis - Social and Medical, J. Soc. Hyg. 19: 1 (Jan.) 1933.)

In a study of the incidence of venereal eye lesions among 15,000 patients with eye disease, W. H. Guy found that syphilitic eye lesions numbered 315 or 2.1 per cent of the total. One hundred and sixty (160) of these cases were interstitial keratitis, of which 150 occurred in congenital syphilis, 7 in late secondary or tertiary acquired syphilis, and 3 were unclassified. (Guy,W.H. - Interstitial Keratitis in Congenital Syphilis, Journal, A.M.A., Nov. 6, 1926).

In a study reported upon by Carvill and Derby on the incidence of interstitial keratitis among eye cases in Boston, the total given for a period of ten years was 756 new interstitial keratitis cases, or 0.45 per cent of 168,489 eye cases. A later report of this original study, giving additional figures for the subsequent six years, brought the incidence down to 0.27 per cent. (Carvill, Maud and Derby, George S. - Interstitial Keratitis, Transactions Section on Ophthalmology, A.M.A. 1925.)

In a study by Berens, already referred to - (The Causes of Blindness in Children - Conrad Berens, C. Edith Kerby, and Evelyn C. McKay, Journal, A.M.A., Dec. 14, 1935, Vol. 105, pp 1949-1954), syphilis accounted for 5.3 per cent of blindness among 2,702 children in schools for the blind in the school year 1933 - 1934. The authors came to the conclusion that syphilis is probably also responsible for a large proportion of blindness now classified as "congenital" or "hereditary".

In a study of the causes of blindness in youth at the Missouri School for the Blind, it was determined that 174 of 507 cases, or 34.3 per cent, indicated blindness due to syphilis or gonorrhea. (Lamb, Harvey D. - Causes of Blindness in Youth, as determined at the Missouri School

for the Blind, Journal of the Missouri State Med. Assoc., March 1926).

In an estimate published by the National Society for the Prevention of Blindness, it was noted that, out of 5,392 applicants for pensions for the blind, about 15 per cent of the blindness was due to syphilis. (Lamb, Harvey, D. - Estimate given in discussion at 1926 Conference of National Society for the Prevention of Blindness.)

Dr. J. Gardner Hopkins, quoting figures from the University of California Dispensary, stated that 8.5 per cent of the cases in the Eye Department of that institution were syphilitic. (Hopkins, J. Gardner - Syphilitic Inflammatory Manifestations as Related to Vision Impairment, Proceedings 1926 Conf. of N.S.P.B.)

Schamberg and Wright have reported that interstitial keratitis is the most common symptom of congenital syphilis in children between the ages of 5 and 16, and that it occurs in about 52 per cent of all cases. (Schamberg, Jay F. and Wright, Carroll S. - Congenital Syphilis, Venereal Disease Information Bull. of U. S. P. H. Serv., Oct. 20, 1929.)

Rodin and Carson found that, of 1,000 patients who had positive blood Wassermann reactions, 100 or 10 per cent had eye lesions. (Rodin, Frank H. and Carson, James G. - Eye Lesions in Patients with Positive Wassermann Reactions, Journal, A.M.A., Aug. 3, 1929.)

Stokes estimates that 25 to 35 per cent of persons who have syphilis will show distinct lesions of the eye or its associated nervous mechanism in the course of the disease. Likewise, he has found that "78 per cent of the eyes of children with familial or prenatal forms of syphilis are affected at some time before the age of 30 years. Yet in only 66 per cent of these children was blood Wassermann reaction positive. Fifty-two per cent of the children had interstitial keratitis."

(Stokes, John H. - Syphilis and the Eye, Joint Conf. Am. Soc. Hyg. Assoc., and N.S.P.B. and Am. Pub. Health Assoc., 1926.)

A number of other studies have been made and reported upon relative to the incidence of syphilis among several groups of patients, including those suffering from various types of eye diseases. Perhaps enough data have been presented to indicate the relative seriousness and importance of syphilis as an etiologic factor in diseases of the eye. Nevertheless, information currently available in this country does not provide a satisfactory picture of the practices followed in hospitals and clinics treating eye cases in such matters as routine serologic tests for syphilis; follow-up of eye patients with positive Wassermanns; examination of immediate relatives, especially husbands, wives and children of those with positive syphilis findings; accepted methods of treating syphilitic eye diseases, or eye diseases complicated by syphilis; and a number of related problems which are of importance if cases of marked diminution of vision and blindness are to be lessened among those who have acquired syphilis, or who are congenital syphilitics. It was the realization of the need for such pertinent data from reliable sources, and the importance of developing some standards of procedure, which prompted the development of the study reported upon.

II - ORGANIZATION OF THE STUDY

In order to carry out an extensive study, under proper professional direction, a special committee on the Study of Syphilis and Eye Diseases was organized as a sub-committee of the Social Hygiene Committee of the New York Tuberculosis and Health Association. Dr. Conrad Berens has served as Chairman of this sub-committee, the others serving

with him being Drs. John H. Dunnington, Henry R. Skeel, Francis W. Shine, and J. A. Goldberg (Secretary). Among major objectives of the Committee are the following:-

1 - The development of accurate diagnoses of syphilitic eye involvements;

2 - Determination of the value of routine Wassermann or similar serologic tests on eye patients, especially on those attending clinics and hospitals;

3 - Determination of minimum social service and follow-up requirements;

4 - Setting up of standards for eye clinic procedures;

5 - Standardization of the treatment of syphilitic eye involvements.

In pursuing these studies, certain working objectives were set up. These were as follows:-

1 - To study the method in which the clinic records are kept at various eye clinics in New York City, with special reference to syphilis and eye complications;

2 - To analyze the material recorded in the clinic records;

3 - To determine whether the serologic tests for syphilis, and other laboratory tests, are called for routinely in eye diseases which may be due to syphilis;

4 - To determine the procedures followed in caring for eye patients presenting a positive Wassermann or other serologic test for syphilis;

5 - To learn whether the clinics utilize sufficient follow-up personnel in such cases, including the bringing in of members of patients' families for check-up or reference to other clinics for the

same purpose;

6 - To gather the necessary statistical material to determine the percentage of the various eye diseases which may be caused by syphilis;

7 - To determine courses of treatment employed for syphilitic patients and the end results of such treatment;

8 - To recommend improvements in the maintenance of records and the procedures followed in the handling of eye patients having syphilis.

The current report may be regarded as the first stage of an analysis of procedures now in force in certain clinics; complete recommendations and standards to meet the noted objectives should be logical future developments.

Insofar as the working objectives are concerned, it should be noted that clinic records were studied and analyzed; procedures followed in the handling of eye patients with syphilis were checked; the matter of follow-up of such patients was investigated; and fairly adequate statistical material was obtained. Some of the other items listed among the working objectives were considered and, it is expected, will be followed up in future inquiries.

III - METHOD OF THE STUDY

In carrying out this study of syphilis and eye diseases, the records of five important eye institutions in New York City were analyzed and tabulated. Individual records of patients were culled for the following information:- (1) personal history in relation to syphilis; (2) family history; (3) clinic findings; (4) laboratory findings;

(5) syphilitic manifestations of the eye; (6) diagnosis both on admission and discharge; (7) follow-up for the eye condition and for the syphilitic condition; (8) disposition of the case; (9) result of syphilis treatment on the eye condition. In seeking data on syphilitic manifestations in the eye, special emphasis was placed on cases in which the following diagnoses were indicated:- (1) iritis, (2) iridocyclitis, (3) retinitis, (4) papillitis, (5) choroiditis, (6) optic atrophy, (7) ophthalmoplegia, (8) Argyll Robertson pupil, (9) interstitial keratitis, etc.

A special form was prepared for the purpose of this study, and all the information called for was recorded whenever such was listed on the clinic form. (See Exhibit A). Due to variations in several clinics in the types of forms used, the maintenance of records, etc., there were necessary variations in procedure.

The following table indicates the total number of case records actually consulted:

Clinic A - - - - - - -	58,147
Clinic B - - - - - - -	33,411
Clinic C - - - - - - -	4,497
Clinic D - - - - - - -	725
Clinic E - - - - - - -	734
Total - - - - - - -	97,514

Mention should be made of the fact that at Clinic D only those charts were analyzed which indicated one of the selected diagnoses, as noted above. The total number of records of eye patients which were studied was over 100,000.

CLINIC A:- The procedure employed in studying the records in this clinic was the analysis of all cases in which a Wassermann reaction was performed during the years 1934 and 1935. For the year 1934

the total number of charts analyzed was 29,628, and for 1935, 28,519. The laboratory file was utilized in order to obtain a list of all Wassermann reactions on eye patients. In analyzing some records in which, according to laboratory reports, a Wassermann test was done, the findings were sometimes not listed.

In the second phase of the study undertaken at this institution, the attempt was made to determine whether a Wassermann test was indicated in certain eye diseases. The list of diagnoses previously indicated was used as a guide in making this analysis. It should be noted that this list was prepared after consultation with an advisory committee of the National Society for the Prevention of Blindness, American Social Hygiene Association, and members of the Committee on Syphilis and Eye Diseases. The records at this institution carried few data regarding personal and family medical histories. In cases of laboratory findings of positive Wassermann reactions there was often no information as to syphilitic clinical manifestations or indications. Only occasional spinal fluid, colloidal gold, or darkfield tests were indicated. The percentages of Wassermann reactions performed will be listed in tables to follow. Many of the records failed to note the diagnosis and there was often a paucity of clinic findings indicated concerning the eye condition. Most of the syphilitic patients discovered in 1934 were referred to the Department of Health or Stuyvesant Square Hospital for treatment. There was apparently little follow-up of these cases. When the patient was referred for syphilitic treatment, contact was often ended insofar as Clinic A was concerned. Apparently little effort was made to induce members of the families of syphilitics to come to the clinic for a serologic examination. This was especially true of the patients treated during 1934.

In 1935 procedures changed considerably. In January of that year a syphilis clinic was initiated under the direction of a recognized syphilologist; also, a trained social service worker was assigned to maintain contact for the patient between the syphilis clinic and the eye clinic in which he was being treated.

In studying the records of Clinic A, as well as of the other institutions, the attempt was made to obtain as much information as possible on the cases reviewed. Frequently, however, the records were incomplete. Of the cases studied at Clinic A, as will be noted from Table I, 3,507 patients were found with conditions which might have been due to syphilis. Of this total, serologic tests for syphilis were performed in only 793 instances, or 22.6 per cent. One hundred and thirty-three (133) or 16.8 per cent were found to have positive Wassermann reactions. No diagnosis of the eye condition was indicated on 84 records, though Wassermann tests were made on these patients; 12 of the group gave positive findings for syphilis.

See following page for Table I.

TABLE I - CLINIC A - DIAGNOSES

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS.	P.C. POSITIVE WASS.
Iritis	533	163	30.6	23	14.1
Iridocyclitis	259	26	10.0	1	3.9
Retinitis	384	79	20.6	3	3.8
" Pigmentosa	64	21	32.8	3	14.3
" Hemorrhagic	59	7	11.9	-	-
" Neuro	18	7	38.9	1	14.3
" Chorio	160	38	23.8	5	13.2
" Proliferans	5	2	40.0	-	-
" Circinate	2	1	50.0	-	-
" Albescens	25	2	8.0	2	100.0
Choroiditis	354	64	18.1	7	10.9
Keratitis	200	37	18.5	5	13.5
" Interstitial	91	47	51.6	23	48.9
" Punctate	29	3	10.3	-	-
" Dendritic	31	1	3.2	-	-
" Marginal	111	3	2.7	-	-
" Sclerosing	24	2	8.3	1	50.0
" Phlyctenular	14	2	14.3	1	50.0
" Bullous	8	2	25.0	-	-
" Fascicular	2	1	50.0	-	-
" Vascular	1	-	-	-	-
" Profunda	24	2	8.3	-	-
" Hypopyon	24	1	4.2	1	100.0
" Herpetic	8	-	-	-	-
" Conjunctivitis	22	5	22.7	1	20.0
" Lattice	1	-	-	-	-
" Iritis	11	8	72.7	2	25.0
Ophthalmoplegia	6	5	83.3	2	40.0
Paralysis	88	14	15.9	1	7.1
" 3rd Nerve	8	7	87.5	2	28.6
" Sup. Rec.	38	14	36.8	1	7.1
" Ext. Rec.	27	23	85.2	4	17.4
" Left Lat.Rec.	37	10	27.0	3	30.0
" Right Lat.Rec.	16	3	18.8	3	100.0
Bell's Palsy	4	4	100.0	1	25.0
Argyll Robertson Pupil	5	4	80.0	1	25.0
Optic Atrophy	210	79	37.6	18	22.8
Optic Neuritis	36	15	41.7	2	13.3
Retrobulbar Neuritis	47	10	21.3	1	10.0
Uveitis	49	45	91.8	10	22.2
Hyalitis	8	-	-	-	-
Cyclitis	16	-	-	-	-
Ptosis	252	12	4.8	1	8.3
Papillitis	3	2	66.7	-	-
Papilledema	55	8	14.5	1	12.5
Episcleritis	122	14	11.5	3	21.4
Cellulitis	16	-	-	-	-
TOTALS	3507	793*	22.6	133*	16.8

*Note:- The total 793 does not include 84 cases with no diagnosis; 12 of these 84 have been excluded from the Positive Wassermann column.

From Table I, it is apparent that far too few serologic tests for syphilis were made. Undoubtedly more than 51.6 per cent of the cases of interstitial keratitis should have been given the benefit of a serologic test. Presumably some examining physicians in Clinic A made a diagnosis of interstitial keratitis and were sufficiently sure of their findings to think it unnecessary to have Wassermann tests carried out. Nevertheless, it would have added to the conclusiveness of the diagnosis to have made a standard test as a confirmation of diagnosis. Emphasis is placed upon this one group - interstitial keratitis - because of the well-recognized connection between this eye condition and syphilis, a close relationship which cannot perhaps be claimed for all the other diagnoses listed in Table I.

From Table I, it appears that 16.8 per cent of 793 patients tested gave evidence of positive serologic findings. Undoubtedly if more of the patients had been given such tests the percentage of positive findings would have been considerably higher.

Of the total of 145 with positive Wassermanns at Clinic A (including 12 for which no diagnoses were listed), it was found that the age distribution was as follows:-

TABLE Ia - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS AT CLINIC A

AGE	NO.
1 to 15	8
16 to 20	5
21 to 25	15
26 to 35	33
36 to 45	32
46 and over	50
No record	2
TOTAL	145

Color was recorded in only 62 instances - all of them white - and omitted in 83 cases. Marital status was as follows:- single 22, married 15, widowed 4, and not recorded 104. Such figures are of little value, but they are cited in order to show a lapse in record-keeping, and the need of more care or additional personnel in keeping these records. An effort was made to learn something about follow-up of patients with positive Wassermanns but the available information was meagre. No record was available in 132 out of 145 cases studied.

Since both clinic and hospital records were studied in Clinic A, it was possible to obtain data about both groups. The clinic patients numbered 117, while there were 23 hospital patients, with no record in 5 instances. Study of the disposition of the 145 cases indicated that 14 were referred to the Department of Health for anti-syphilitic treatment; 33 to other hospitals; 12 to private physicians; and in 86 cases the disposition was not recorded. Family histories were likewise incompletely noted.

CLINIC B:- The records analyzed at this institution covered the year 1934, and included cases similar to those recorded in Table I. In all, 33,411 records were examined, giving 1,100 cases with the diagnoses sought. Little information was listed in the records insofar as personal and family medical histories were concerned. When a patient proved to be syphilitic, the social service department followed up the case and directed the treatment, keeping a record of the courses of treatment, dates, amount per injection, laboratory test results, economic status of patient and, in a few instances, family history. Occasionally the social service worker succeeded in bringing in members of the patients' families for laboratory tests; and when the tests proved positive

for syphilis, the effort was made - and at times with success - to induce the newly discovered cases to accept treatment.

A major obstacle to the anti-syphilitic service at this institution was lack of funds for the treatment of indigent patients. In some cases the charge was reduced, but if the patient was unable to afford the lesser fee, he was often referred to a public venereal disease clinic. In such a case, the social service department tried to induce the patient to return for further eye treatment; also to correlate the anti-syphilitic and the eye treatment. There was very little information concerning the syphilitic or the eye clinic findings; some records even failed to give the diagnosis. There were but few spinal fluid, colloidal gold, or darkfield tests done. A Wassermann test was not made in many instances when the diagnosis possibly warranted one. Too few cases were carried through to completion of treatment to enable one to draw any accurate conclusions as to the results of the treatment. However, treatment was discontinued only after three successive Wassermann tests proved negative. The laboratory also did a Kahn test in most instances in which a Wassermann test was done.

As has already been indicated, the total number of charts studied at this institution was 33,411. Of this number, 1,100 had diagnoses which might have been due to syphilis, and Wassermann tests were performed on 654, or 59.5 per cent. The number found with a positive serologic diagnosis was 134, or 20.5 per cent of the total thus tested. The following Table II presents these figures in greater detail.

See following page for Table II.

TABLE II - CLINIC B - DIAGNOSES

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS.	P.C. POSITIVE WASS.
Iritis	235	147	62.6	19	12.9
Iridocyclitis	43	26	60.5	7	26.9
Retinitis	96	61	63.5	2	3.3
" Pigmentosa	17	8	47.1	1	12.5
" Hemorrhagic	-	-	-	-	-
" Neuro	5	3	60.0	1	33.3
" Chorio	39	31	79.5	9	29.0
" Proliferans	-	-	-	-	-
" Circinate	-	-	-	-	-
" Albescens	-	-	-	-	-
Choroiditis	84	60	71.4	8	13.3
Keratitis	111	49	44.1	10	20.4
" Interstitial	98	80	81.6	45	56.3
" Punctate	1	1	100.0	-	-
" Dendritic	2	-	-	-	-
" Marginal	37	10	27.0	-	-
" Sclerosing	3	1	33.3	-	-
" Phlyctenular	13	2	15.4	-	-
" Bullous	1	-	-	-	-
" Fascicular	2	2	100.0	-	-
" Vascular	-	-	-	-	-
" Hypopyon	1	1	100.0	-	-
" Herpetic	1	1	100.0	-	-
" Conjunctivitis	3	1	33.3	-	-
" Iritis	12	8	66.7	6	75.0
Ophthalmoplegia	2	1	50.0	-	-
Paralysis	5	3	60.0	-	-
" 3rd Nerve	2	1	50.0	1	100.0
" Sup. Rec.	2	2	100.0	1	50.0
" Ext. Rec.	11	7	63.6	2	28.6
" Left Lat. Rec.	1	-	-	-	-
" Right Lat. Rec.	6	5	83.3	-	-
Bell's Palsy	1	-	-	-	-
Argyll Robertson Pupil	1	1	100.0	-	-
Optic Atrophy	107	65	60.7	13	20.0
Optic Neuritis	10	8	80.0	2	25.0
Retrobulbar Neuritis	9	7	77.8	1	14.3
Uveitis	45	32	71.1	2	6.3
Hyalitis	-	-	-	-	-
Cyclitis	3	2	66.7	-	-
Ptosis	3	2	66.7	2	100.0
Papillitis	6	4	66.7	1	25.0
Papilledema	1	-	-	-	-
Episcleritis	81	22	27.2	1	4.5
Keratitis Lattice	-	-	-	-	-
Keratitis Profunda	-	-	-	-	-
TOTALS	1100	654	59.5	134	20.5

From a study of Table II, it is apparent by comparison that, at least in some instances, a relatively higher standard of service was carried out in treating syphilitic eye diseases than at Clinic A. For example, whereas at the latter institution only 18.5 per cent of 200 cases diagnosed as simple keratitis were Wassermann tested, at Clinic B, 44.1 per cent of 111 with a similar diagnosis were so examined. At Clinic A only 51.6 per cent of the cases diagnosed as interstitial keratitis were serologically tested; at Clinic B such tests were performed in 81.6 per cent of cases with similar diagnoses.

Considering the total of 1,100 patients with the diagnoses listed in Table II, a total of 654 or 59.5 per cent were given the benefit of a serologic test for syphilis. A fairly good record was achieved at this institution, at least insofar as blood tests were concerned. Incidentally, it may be of interest to note that, even though such tests were made more generally, the percentage of positive Wassermanns was 20.5, as compared with 16.8 per cent at Clinic A.

The age distribution of the 134 patients with positive Wassermann reactions was as follows:-

TABLE IIa - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS AT CLINIC B

AGE	NO.
1 to 15	19
16 to 25	26
26 to 35	22
36 to 45	20
46 and over	46
No record	1
TOTAL	134

Records as to color indicated 81 white, 3 Negro, and no record in 50 instances. There were 49 males and 58 females, and no record in 27 cases. Fifty-four (54) were single, 57 married, 14 widowed, and no record in 9 cases. The follow-up record indicated an attempt to check up on 84 out of 134 patients, with no record of such service in the balance. The following details the disposition of the patients as recorded:

TABLE IIb - DISPOSITION OF CASES AT CLINIC B

	No.
Under treatment - - - - - - - - - - - - - -	48
Failed to attend - - - - - - - - - - - - -	5
Discharged - - - - - - - - - - - - - - - -	1
No record - - - - - - - - - - - - - - - - -	23
Department of Health - - - - - - - - - -	33
Other hospitals - - - - - - - - - - - - - -	22
Private physicians - - - - - - - - - - - -	1
Died as result of syphilis - - - - - - -	1
TOTAL -	134

CLINIC C:- The records of the clinic are divided into active and closed case files. The procedure employed in this study was to examine all these records from 1929 to May 1935, the total numbering only 4,497, and to select all charts having a diagnosis which might be due to syphilis. Forms were filled out for those in which a Wassermann reaction was performed. At this clinic a folder is assigned to each patient. It contains the clinic record and all other material pertaining to the particular case. This record is drawn up in book form. Most records were filled out meticulously as to personal and family histories, clinic findings and diagnosis. A social service form is filled out for each patient, and in many instances follow-up notes are included. In many cases the social service notes contained merely information concerning

the financial status of the patient. A good many cases were so simple as not to warrant any follow-up. The social service division offered a guide to bring blind patients to the clinic.

Those in need of syphilis treatment are referred to outside clinics, the eye clinic having no syphilis department. The social service division keeps a careful check of all such patients. In many instances, the clinic, besides having Wassermann and Kahn tests done, carried out Kolmer tests as well. Records of serologic tests and subsequent treatment provided in other institutions are included in the record folder.

The total number of charts studied at this clinic was 4,497. Of this number, 754 had diagnoses which might have been due to syphilis. Wassermann tests were performed on 313, or 41.5 per cent. The number found with a positive diagnosis was 41, or 13.1 per cent.

See following page for Table III.

TABLE III - CLINIC C - DIAGNOSES

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS.	P.C. POSITIVE WASS.
Iritis	43	18	41.9	4	22.2
Iridocyclitis	12	6	50.0	-	-
Retinitis	11	9	81.8	1	11.1
" Pigmentosa	71	34	47.9	2	5.9
" Hemorrhagic	5	4	80.0	-	-
" Neuro	3	1	33.3	-	-
" Chorio	183	84	45.9	5	6.0
" Proliferans	3	-	-	-	-
" Circinate	1	1	100.0	-	-
" Albescens	-	-	-	-	-
Choroiditis	23	6	26.1	1	16.7
Keratitis	60	14	23.3	3	21.4
" Interstitial	31	21	67.7	6	28.6
" Punctate	1	-	-	-	-
" Dendritic	2	-	-	-	-
" Marginal	1	-	-	-	-
" Sclerosing	-	-	-	-	-
" Phlyctenular	5	-	-	-	-
" Bullous	2	1	50.0	-	-
" Fascicular	-	-	-	-	-
" Vascular	-	-	-	-	-
" Profunda	1	-	-	-	-
" Hypopyon	-	-	-	-	-
" Herpetic	-	-	-	-	-
" Conjunctivitis	1	-	-	-	-
" Lattice	-	-	-	-	-
" Iritis	2	-	-	-	-
Ophthalmoplegia	2	1	50.0	1	100.0
Paralysis	4	4	100.0	2	50.0
" 3rd Nerve	2	-	-	-	-
" Sup. Rec.	-	-	-	-	-
" Ext. Rec.	5	-	-	-	-
" Left Lat. Rec.	2	2	100.0	-	-
" Right Lat. Rec.	1	1	100.0	-	-
Bell's Palsy	-	-	-	-	-
Argyll Robertson Pupil	3	1	33.3	1	100.0
Optic Atrophy	176	72	40.9	14	19.4
Optic Neuritis	22	6	27.3	-	-
Retrobulbar Neuritis	27	12	44.4	1	8.3
Uveitis	42	14	33.3	-	-
Hyalitis	1	-	-	-	-
Cyclitis	-	-	-	-	-
Ptosis	1	-	-	-	-
Papillitis	-	-	-	-	-
Papilledema	1	1	100.0	-	-
Episcleritis	4	-	-	-	-
TOTALS	754	313	41.5	41	13.1

From Table III it will be noted that, of 754 patients with the selected diagnoses, Wassermann tests were performed on 313 or 41.5 per cent, with a finding of 13.1 per cent of the Wassermann reactions as positive. Comparison of the frequency of serologic tests indicates that at Clinics A, B and C, the record of Clinic C (41.5 per cent) compares favorably with Clinic A (22.6 per cent). While it does not approach the record of 59.5 per cent achieved at Clinic B, the type of patients treated and their more serious disabilities may have accounted for the difference. However, the variations in procedures, as indicated in this report, should lead to a clearer definition of routine methods to be pursued in high grade eye clinics and hospitals.

The 41 patients with positive Wassermanns presented an age distribution as follows:

TABLE IIIa - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS AT CLINIC C

AGE	NO.
1 to 15	5
21 to 25	4
26 to 35	10
36 to 45	5
46 and over	16
No record	1
TOTAL	41

Study of color or race indicated that 28 were whites and 13 Negroes. Marital status was as follows:- 17 single, 13 married, 10 widowed and 1 divorced. Of these 41 cases, it was noted that 2 were referred to the Department of Hospitals, 6 to the Department of Health, 11 to other hospitals or clinics, 2 to private physicians, and no record of disposition was indicated in 20 instances.

CLINIC D:- The method followed in this clinic was to study the records from the year 1926 through May 1935. In order to obtain the desired charts, reference was first made to the diagnostic file, from which a list of eye cases, with diagnoses which might be due to syphilis, was compiled. This list comprised 725 patients and a survey form was filled out for 495 which had a diagnosis possibly due to syphilis. In 148 cases the charts were not obtainable either because they were in the wards, in the clinic, or of private patients. In 82 cases the diagnoses were other than syphilis; inclusion of these was due to clerical error. In 108 cases no Wassermann reaction was carried out because the patient made one or two visits and did not respond to social service follow-up. The total number of all eye patients treated during the given period was not available.

The clinic records were in book form, including all data on the case, all correspondence, laboratory test results, X-ray charts, etc. Detailed and complete information was available concerning personal, family, and medical histories; diagnosis; clinic findings and etiology; also prognosis; description of operations, if any; etc. Laboratory findings were noted on stickers pasted into the record. Wassermann, Kahn, spinal fluid-colloidal gold, and other tests were often utilized.

In about 75 per cent of the charts studied the patient was referred to the School of Dental and Oral Surgery where X-rays of the teeth were taken. These X-rays were included in the record.

Photographs of the eye condition were taken on admission and after treatment of a number of children. But few Wassermann tests were made on children under the age of 16, though Kahn tests were occasionally performed. Cultures of the nose and throat were taken in almost all instances.

The social service follow-up was thorough, and every effort was made to induce attendance at the clinic, the service going so far as to send a worker to the home, furnishing carfare to needy patients and, in the case of blind patients, furnishing a guide. When a patient proved to be syphilitic, effort was made to have other members of the family submit to Wassermann tests, and in instances where such tests proved to be positive, the newly discovered patient was often induced to accept treatment.

When a patient is admitted to Clinic D he is referred to a certain clinic department only after a careful examination by the admitting physician. When syphilitics failed to attend the treatment clinic after the proper follow-up, they were reported to the Department of Health. Anti-syphilitic treatment was discontinued only after three consecutive negative serologic tests for syphilis. These tests were advised for a long period following the termination of treatment. The total number of records studied at this clinic was 725. Table IV indicates the diagnostic distribution of 495 cases studied.

See following page for Table IV.

TABLE IV - CLINIC D - DIAGNOSES

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS.	P.C. POSITIVE WASS.
Iritis	41	36	87.8	6	16.7
Iridocyclitis	66	50	75.8	9	18.0
Retinitis	66	60	90.9	16	26.7
" Pigmentosa	10	3	30.0	-	-
" Hemorrhagic	-	-	-	-	-
" Neuro	2	2	100.0	2	100.0
" Chorio	27	25	92.6	6	24.0
" Proliferans	-	-	-	-	-
" Circinate	-	-	-	-	-
" Albescens	-	-	-	-	-
Choroiditis	49	39	79.6	5	12.8
Keratitis	35	31	88.6	13	41.9
" Interstitial	14	14	100.0	10	71.4
" Punctate	-	-	-	-	-
" Dendritic	-	-	-	-	-
" Marginal	-	-	-	-	-
" Sclerosing	-	-	-	-	-
" Phlyctenular	-	-	-	-	-
" Bullous	-	-	-	-	-
" Fascicular	-	-	-	-	-
" Vascular	-	-	-	-	-
" Profunda	-	-	-	-	-
" Hypopyon	-	-	-	-	-
" Herpetic	-	-	-	-	-
" Conjunctivitis	2	-	-	-	-
" Lattice	-	-	-	-	-
" Iritis	-	-	-	-	-
Ophthalmoplegia	47	10	21.3	3	30.0
Paralysis	-	-	-	-	-
" 3rd Nerve	1	-	-	-	-
" Sup. Rec.	1	-	-	-	-
" Ext. Rec.	2	-	-	-	-
" Left Lat. Rec.	1	-	-	-	-
" Right Lat. Rec.	-	-	-	-	-
Bell's Palsy	-	-	-	-	-
Argyll Robertson Pupil	7	5	71.4	2	40.0
Optic Atrophy	57	54	94.7	17	31.5
Optic Neuritis	9	8	88.9	4	50.0
Retrobulbar Neuritis	4	2	50.0	-	-
Uveitis	23	20	87.0	4	20.0
Hyalitis	-	-	-	-	-
Cyclitis	-	-	-	-	-
Ptosis	1	-	-	-	-
Papillitis	6	6	100.0	-	-
Papilledema	7	7	100.0	-	-
Episcleritis	17	15	88.2	3	20.0
TOTALS	495	387	78.2	100	25.8

From Table IV it will be noted that, of 495 cases tabulated, 387 or 78.2 per cent were given a serologic test for syphilis - a significantly high percentage. Of those so tested, 100 or 25.8 per cent were reported as positive for syphilis. In cases of iritis, 87.8 per cent were tested; retinitis 90.9 per cent; chorioretinitis 92.6 per cent; choroiditis 79.6 per cent; keratitis 88.6 per cent; interstitial keratitis 100 per cent; optic atrophy 94.7 per cent; and others with similarly high percentages of achievement. Of the four institutions thus far considered, the record of serologic testing for syphilis at Clinic D has been outstanding. Analysis of additional data assembled at this institution may be of interest. The age distribution of the 100 patients with positive serologic findings was as follows:-

TABLE IVa - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS AT CLINIC D

AGE	NO.
1 to 15	15
16 to 25	16
26 to 35	25
36 to 45	23
46 and over	20
No record	1
TOTAL	100

Color distribution showed 41 whites, 37 Negroes, and no record in 22 instances. There were 39 males, 35 females, with no record in 26 instances. Marital status of this group of patients was as follows:- single 37, married 50, widowed 5, and no record 8. The attempt was made at each institution studied to gather as much data as possible on the family histories of the patients. Of the five institutions where records were studied, Clinic D achieved a high record in this matter. There is herewith presented material on the family history of the patients concerned.

TABLE IVb - FAMILY HISTORY OF PATIENTS AT CLINIC D

Positive Wassermann in fathers	13
Negative Wassermann " "	4
No Wassermann taken " "	32
Positive Wassermann " mothers	33
Negative Wassermann " "	8
No Wassermann taken " "	18
Positive Wassermann " children	11
Negative Wassermann " "	4
Positive Wassermann " husbands or wives	16
Negative Wassermann " " " "	4
Positive Wassermann " sisters	12
Negative Wassermann " "	2
Positive Wassermann " brothers	10
Negative Wassermann " "	3
Stillbirths by patients	17
Premature stillbirths by patients	9
Stillbirths by patients' mothers	13
Premature stillbirths by patients' mothers	7
Stillbirths by patients' wives	8
Premature stillbirths by patients' wives	5
Syphilis in entire family	8
Syphilitic insanity in patient's family	2
Syphilitic deaths in patient's family	5

A fairly complete social service record of the 100 patients with positive Wassermann findings was available. The following tabulation may be of some interest:

TABLE IVc - DISPOSITION OF CASES AT CLINIC D

Under treatment	47
Discharged	3
Failed to attend	14
To other hospitals	3
" Department of Hospitals	5
" Department of Health	3
" Private physicians	5
" State Hospital	3
Died	8
No record	9
TOTAL	100

CLINIC E:- The procedure in the survey at this institution was to consult the social service file of all patients entering the clinic, selecting those having a diagnosis whose etiology might be that of syphilis. This list was turned over to the record clerk who made available the necessary charts. The syphilitic treatment record was kept separate from the eye record, but was easily obtainable.

A survey form was filled out for each patient receiving treatment for syphilis, and also for those showing a positive Wassermann reaction. Note was made of all patients having a diagnosis with possible syphilitic etiology, but showing a negative Wassermann reaction or no Wassermann record whatever. The total number of eye records studied was 734; of these, 113 contained diagnoses listed in Table V.

The records in this institution were fairly complete. However, the color of the patient was rarely listed on the record, though it was sometimes included in the social service files. When congenital syphilis was suspected, effort was made to have other members of the family submit to Wassermann tests. The syphilis clinic findings were usually included on the dermatology record, but most cases were listed as tertiary syphilis.

The eye clinic requested Wassermann tests in most instances. When the test was not called for, other tests usually were included, such as routine blood (other than for syphilis), sugar, etc., and their results noted accordingly. Some cases presumably did not warrant a Wassermann test, as those of traumatic origin, etc. Most of the serologic tests for syphilis were performed according to the Wassermann procedure, with few Kahn tests, and only an occasional spinal fluid colloidal gold test.

The social service worker was present at all eye clinic sessions and did all necessary follow-up. Practically every case of syphilis was given treatment in the Dermatology Clinic. When a patient lived too far away or his working hours conflicted with those of the Dermatology Clinic, he was sent to the Department of Health or elsewhere for syphilitic treatment.

As has already been indicated, the total number of charts studied at this clinic was 734. Of these, 113 presented diagnoses which are listed in Table V. Clinic E has the highest record of achievement insofar as percentage of Wassermann reactions is concerned; of 113 patients, 90 or 79.6 per cent were serologically tested for syphilis. In all, 36 of the 90, or 40 per cent were reported as positive for syphilis. Table V indicates the diagnoses, numbers and percentages in full.

See following page for Table V.

TABLE V - CLINIC E - DIAGNOSES

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS.	P.C. POSITIVE WASS.
Iritis	24	19	79.2	7	36.8
Iridocyclitis	2	2	100.0	-	-
Retinitis	1	1	100.0	-	-
" Pigmentosa	4	3	75.0	-	-
" Hemorrhagic	1	1	100.0	-	-
" Neuro	2	2	100.0	1	50.0
" Chorio	12	9	75.0	1	11.1
" Proliferans	-	-	-	-	-
" Circinate	-	-	-	-	-
" Albescens	-	-	-	-	-
Choroiditis	3	-	-	-	-
Keratitis	5	2	40.0	-	-
" Interstitial	11	11	100.0	9	81.8
" Punctate	2	2	100.0	1	50.0
" Dendritic	1	-	-	-	-
" Marginal	2	2	100.0	1	50.0
" Sclerosing	2	2	100.0	-	-
" Phlyctenular	6	3	50.0	2	66.7
" Bullous	-	-	-	-	-
" Fascicular	-	-	-	-	-
" Vascular	-	-	-	-	-
" Profunda	-	-	-	-	-
" Hypopyon	-	-	-	-	-
" Herpetic	1	1	100.0	-	-
" Conjunctivitis	-	-	-	-	-
" Lattice	-	-	-	-	-
" Iritis	-	-	-	-	-
Ophthalmoplegia	5	3	60.0	1	33.3
Paralysis	-	-	-	-	-
" 3rd Nerve	-	-	-	-	-
" Sup. Rec.	-	-	-	-	-
" Ext. Rec.	-	-	-	-	-
" Left Lat. Rec.	-	-	-	-	-
" Right Lat. Rec.	-	-	-	-	-
Bell's Palsy	-	-	-	-	-
Argyll Robertson Pupil	1	1	100.0	1	100.0
Optic Atrophy	19	18	94.7	10	55.6
Optic Neuritis	1	1	100.0	1	100.0
Retrobulbar Neuritis	2	2	100.0	-	-
Uveitis	2	2	100.0	-	-
Hyalitis	1	1	100.0	1	100.0
Cyclitis	1	1	100.0	-	-
Ptosis	-	-	-	-	-
Papillitis	-	-	-	-	-
Papilledema	1	1	100.0	-	-
Episcleritis	1	-	-	-	-
TOTALS	113	90	79.6	36	40.0

Among the more interesting data in Table V are the figures indicating that 79.2 per cent of the cases of iritis were serologically tested for syphilis; 100 per cent of interstitial keratitis; 94.7 per cent of optic atrophy - in all, 79.6 per cent of the total number of patients under consideration. While the 100 per cent record under other diagnoses is significant, there were, however, so few patients with these additional diagnoses, that it might be well to consider these perfect figures as an index of general methods followed at this institution. It may be of interest to note that 81.8 per cent of the cases of interstitial keratitis were reported as positive for syphilis.

The age distribution of the 36 patients with positive Wassermann findings was as follows:-

TABLE Va - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS AT CLINIC E

AGE	NO.
1 to 15	8
16 to 20	1
21 to 25	2
26 to 35	3
36 to 45	14
46 and over	7
No record	1
TOTAL	36

Records as to color were incomplete. Marital status was as follows:- single 10, married 20, widowed 3, no record 3. The record as to follow-up by the Social Service Department indicated that 25 out of 36 patients were followed up, with a lapse in the patients' charts in 11 instances - that is, no record was available in these additional cases. Similarly, the records on disposition of patients were somewhat incomplete. On these were notations indicating that 6 patients were still under treatment, 4 were referred to other hospitals, and no record in 26 instances.

IV - STATISTICAL SUMMARY

The preceding data give a fair indication of the standard of record-keeping and frequency of serologic testing for syphilis current in each of the five institutions whose charts have been studied. It is always possible that a wrong impression may result from the presentation of figures such as precede, because they do not, and necessarily cannot, go "behind the scene" and bring in all the personal factors which are at play in any large medical institution. The attitude of attending physicians and surgeons to the whole question of syphilis, the frequency with which physicians studying the specialty of eye diseases are permitted to make final determination as to the desirability or necessity of Wassermann tests, the responsibility in such matters placed on the shoulders of internes, the available laboratory facilities, as well as the financial ability of a given institution to provide serologic tests particularly for non-paying clinic patients - these and other matters are items which may influence services in one way or another. Nevertheless, it must be assumed that in institutions such as are under consideration, representing as they do medical and surgical services of national repute, recognized and routine procedures should be the rule rather than the exception. By this it is not implied that the chiefs of service in any of the institutions were not and are not fully informed as to medical implications insofar as syphilitic eye involvements are concerned, especially for the listed categories. Rather, the thought is that, at least in one or more clinics studied, there has not been a determined effort to carry out routine serologic tests for syphilis, at least for the diagnoses listed, or for those in which there is good ground to consider syphilis as an etiological factor. Perhaps, as a result of this report, it may be possible to crystallize medical opinion to such a degree

that standards will be set up and accepted not only by the five clinics studied but in all institutions treating diseases of the eye in New York City and elsewhere.

The following Table VI presents in summarized form the totals for the five institutions.

See following page for Table VI.

TABLE VI - SUMMARY OF EYE DISEASES WITH POSSIBLE SYPHILITIC INVOLVEMENT IN FIVE INSTITUTIONS

DIAGNOSIS	TOTAL CASES	TOTAL WASS. MADE	P.C. WASS. MADE	POSITIVE WASS	P.C. POSITIVE WASS.
Iritis	876	383	43.7	59	15.4
Iridocyclitis	382	110	28.8	17	15.5
Retinitis	558	210	37.6	22	10.5
" Pigmentosa	166	69	41.6	6	8.7
" Hemorrhagic	65	12	18.5	-	-
" Neuro	30	15	50.0	5	33.3
" Chorio	421	187	44.4	26	13.9
" Proliferans	8	2	25.0	-	-
" Circinate	3	2	66.7	-	-
" Albescens	25	2	8.0	2	100.0
Choroiditis	513	169	32.9	21	12.4
Keratitis	411	133	32.4	31	23.3
" Interstitial	245	173	70.6	93	53.8
" Punctate	33	6	18.2	1	16.7
" Dendritic	36	1	2.8	-	-
" Marginal	151	15	9.9	1	6.7
" Sclerosing	29	5	17.2	1	20.0
" Phlyctenular	38	7	18.4	3	42.9
" Bullous	11	3	27.3	-	-
" Fascicular	4	3	75.0	-	-
" Vascular	1	-	-	-	-
" Profunda	25	2	8.0	-	-
" Hypopyon	25	2	8.0	1	50.0
" Herpetic	10	2	20.0	-	-
" Conjunctivitis	28	6	21.4	1	16.7
" Lattice	1	-	-	-	-
" Iritis	25	16	64.0	8	50.0
Ophthalmoplegia	62	20	32.3	7	35.0
Paralysis-	96	21	21.9	3	14.3
" 3rd Nerve	14	8	57.1	3	37.5
" Sup. Rec.	41	16	39.0	2	12.5
" Ext. Rec.	45	30	66.7	6	20.0
" Left Lat. Rec.	41	12	29.3	3	25.0
" Right Lat. Rec.	23	9	39.1	3	33.3
Bell's Palsy	5	4	80.0	1	25.0
Argyll Robertson Pupil	17	12	70.6	5	41.7
Optic Atrophy	569	288	50.6	72	25.0
Optic Neuritis	78	38	48.7	9	23.7
Retrobulbar Neuritis	89	33	37.1	3	9.1
Uveitis	161	113	70.2	16	14.2
Hyalitis	10	1	10.0	1	100.0
Cyclitis	20	3	15.0	-	-
Ptosis	257	14	5.5	3	21.4
Papillitis	15	12	80.0	1	8.3
Papilledema	65	17	26.2	1	5.9
Episcleritis	225	51	22.7	7	13.7
Cellulitis	16	-	-	-	-
TOTALS	5969	2237	37.5	444*	19.8

*Note:- This total does not include 12 cases in which no diagnosis was given.

From Table VI it will be noted that, of approximately 100,000 eye charts studied, a total of 5,969, or about six per cent, presented diagnoses listed in this table, and which were classified by the special Committee on the Study of Syphilis and Eye Diseases as possibly having syphilis as an etiologic factor. The record of Wassermann tests made on these cases representing the five institutions was not high. Only 2,237 patients were given the benefit of a serologic test for syphilis, equivalent to 37.5 per cent. Of this number 444, or 19.8 per cent, were found with positive diagnoses. Comparison with five preceding tables gives an indication of the relative thoroughness as well as the findings in the individual institutions.

It may be of interest to note that the largest percentages of Wassermann tests were made on the following diagnoses:-

TABLE VIa - PERCENTAGE OF WASSERMANN TESTS WITH POSITIVE FINDINGS IN SELECTED DIAGNOSES

DIAGNOSIS	NO. OF PATIENTS	PER CENT POSITIVE
Iritis - - - - - - - - -	383	15.4
Choroiditis - - - - -	169	12.4
Keratitis, simple - -	133	23.3
Interstitial keratitis	173	53.8
Keratitis iritis - - -	16	50.0
Argyll Robertson Pupil	12	41.7
Uveitis - - - - - - - -	113	14.2

The following table represents the age distribution of 456 patients.*

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*See footnote to Table VI.

TABLE VIb - AGE DISTRIBUTION OF PATIENTS WITH POSITIVE WASSERMANNS IN FIVE CLINICS

AGE	NO.
1 to 15	55
16 to 20	22
21 to 25	47
26 to 35	93
36 to 45	94
46 and over	139
No record	6
TOTAL	456

There were 215 whites, 53 Negroes, and no record in 188 cases. Sex was irregularly recorded in two of the institutions. The marital status distribution was as follows:- single 140, married 155, widowed 36, divorced 1, no record 124.

Table VII presents data on family histories of patients in whom a positive Wassermann test was recorded. In two of the institutions few data were available.

TABLE VII - FAMILY HISTORY OF PATIENTS IN FIVE CLINICS

	CLINIC A	CLINIC B	CLINIC C	CLINIC D	CLINIC E	TOTALS
Pos.Wass. in fathers - - -	4	6	2	13	1	26
" " " mothers - - -	7	13	2	33	4	59
" " " children - -	4	1	-	11	-	16
" " " husbands, wives	3	2	-	16	-	21
" " " sisters - - -	1	5	-	12	-	18
" " " brothers - -	3	7	-	10	-	20
Neg. " " fathers - - -	11	3	-	4	-	18
" " " mothers - - -	6	3	-	8	-	17
" " " children - -	3	1	-	4	-	8
" " " husbands, wives	1	1	-	4	-	6
" " " sisters - - -	1	-	-	2	-	3
" " " brothers - -	1	-	-	3	-	4
Stillbirths by patients -	-	21	-	17	2	40
Premature stillbirths by patients - - - -	-	-	-	9	-	9
" stillbirths by patients' mothers - - - -	-	-	-	7	-	7
" " by patients' wives	-	-	-	5	-	5
Stillbirths by pts' mothers	-	10	-	13	2	25
" " " wives	-	-	-	8	1	9
Syphilis in entire family	-	4	-	8	-	12
Syphilitic insanity in pts' family - - - - - - -	-	-	-	2	-	2
Syphilitic deaths in pts' family - - - - - - -	-	5	-	5	3	13

The charts were likewise studied for an indication of the clinical findings presented by the patients. Again it must be noted that in two of the institutions little, if any, attempt was made to record these data. The findings of interest are meningovascular syphilis 12 cases, congenital syphilis 51 cases, tertiary syphilis 24 cases, tabes dorsalis 15 cases, secondary syphilis 9 cases, and primary syphilis 9 cases. Seven (7) patients gave evidence of cerebrospinal syphilis. It would have been of considerable value if more thorough clinical findings had been recorded in order that cause and effect relationships between syphilis and eye diseases could be more carefully studied.

The following table presents an indication of the recorded disposition of the cases with positive Wassermann findings. This includes 12, as has already been noted, for whom no diagnoses were entered.

TABLE VIIa - DISPOSITION OF CASES WITH POSITIVE WASSERMANN FINDINGS

	CLINIC A	CLINIC B	CLINIC C	CLINIC D	CLINIC E	TOTALS
Under treatment	-	48	-	47	6	101
Discharged	-	1	-	3	-	4
Failed to attend	-	5	-	14	-	19
No record	86	23	20	9	26	164
Referred to other hospitals	33	22	11	3	4	73
" " Dept. of Hosp.	-	-	2	5	-	7
" " " " Health	14	33	6	3	-	56
" " private physician	12	1	2	5	-	20
Transferred to State Hospital	-	-	-	3	-	3
Died; cause - syphilis	-	1	-	8	-	9

The distribution of cases indicated that there were 294 clinic patients, 2 hospital patients, 97 both clinic and hospital patients, and no record in 63 cases.

The lack of recorded data rendered it impossible to analyze completely the social service follow-up. For example, in one institution, of 145 patients with positive Wassermann findings, there was no record of a follow-up service in 132 cases. In another, of 134 patients no follow-up

was recorded in 50 cases. In still another, of 41 patients there was no follow-up record in 15 cases. In the institution presenting the best record there was no record of a follow-up service in only 18 of 100 patients.

In Table VIII an attempt is made to record the number of positive and negative Wassermann tests recorded in the families of syphilitic patients under consideration. These data are again incomplete, particularly in two of the institutions studied.

TABLE VIII - WASSERMANN FINDINGS IN FAMILIES

	CLINIC A		CLINIC B		CLINIC C		CLINIC D		CLINIC E		TOTALS	
	POS.	NEG.	POS.	NEG.	POS.	NEG.	POS.	NEG.	POS.	NEG.	POS.	NEG.
Fathers--	4	11	6	3	2	-	13	4	1	-	26	18
Mothers--	7	6	13	3	2	-	33	8	4	-	59	17
Children-	4	3	1	1	-	-	11	4	-	-	16	8
Sisters -	1	1	5	-	-	-	12	2	-	-	18	3
Brothers-	3	1	7	-	-	-	10	3	-	-	20	4
Husbands or wives-	3	1	2	1	-	-	16	4	-	-	21	6
TOTALS --	22	23	34	8	4	-	95	25	5	-	160	56

Table IX presents an analysis of the total number of cases of the five institutions studied. Some of this material has previously been referred to, but this summarized form may assist in the better visualization of the findings of the study.

TABLE IX - ANALYSIS OF THE TOTAL CASES OF FIVE CLINICS

CLINIC	TOTAL CASES	TOTAL CASES WITH POSSIBLE SYPHILITIC INVOLVEMENT	TOTAL WASS. MADE	TOTAL CASES POS. WASS.	TOTAL CASES DOUBTFUL WASS.	TOTAL CASES NEG. WASS.	TOTAL CASES IN WHICH NO WASS. WERE MADE
A - - - -	58,147	3,507	793*	133**	-	732	2,630
B - - - -	33,411	1,100	654	134	-	520	446
C - - - -	4,500	754	313	41	1	271	441
D - - - -	725	495	387	100	2	285	108
E - - - -	734	113	90	36	4	50	23
TOTALS - -	97,517	5,969	2,237*	444**	7	1,858	3,648

*This does not include 84 cases in which Wassermann tests were made but no diagnosis recorded on the charts.

**This does not include 12 cases with positive Wassermann findings in which the complete diagnosis was not recorded.

V - SUMMARY AND CONCLUSIONS

The major objectives of the Committee on Syphilis and Eye Diseases were the following:- (1) the development of accurate diagnoses of syphilitic eye diseases; (2) the determination of the value of routine Wassermann or serologic tests on eye patients; (3) the determination of minimum social service and follow-up requirements; (4) setting up of standards for eye clinic procedures; and (5) standardization of the treatment of syphilitic eye diseases.

Some of the limitations of current procedures in clinics treating patients with syphilitic eye diseases have undoubtedly become apparent through the preceding pages. In 1926 Dr. Conrad Berens published a report on the problem of social service and follow-up in ophthalmology and oto-laryngology. (Berens, C. "Social Service and Follow-up in Ophthalmology". Conclusions after re-study of hospitals in New York and Brooklyn, Transactions of the American Academy of Ophthalmology and Oto-Laryngology, 1926, p. 226.) This report stressed the inadequacy and failure of social service follow-up in syphilitic patients. It indicated that systematic follow-up was of the utmost importance in certain types of eye cases, nearly all of which are included in the first six tables listed in this report.

Among the major recommendations growing out of the current study are the following:

1 - Careful taking of personal histories, with emphasis on the history of syphilis, including genital lesions, skin lesions, ulcers, etc.; the amount of treatment received, and where such treatment was given.

2 - The family history of the patient, including note as to whether there was syphilis in the father, the mother, the patient's children, etc.; also history of locomotor ataxia, general paralysis, cause of death of father or mother, of brothers or sisters and of children of the patient.

3 - Clinical findings, including especially tabes dorsalis, general paralysis, taboparesis, meningovascular syphilis, congenital syphilis, and gumma.

4 - Laboratory reports, including one or more serologic tests for syphilis, at least in cases with selected diagnoses.

5 - Syphilitic manifestations of the eye, with statement of the exact diagnosis on admission and also on discharge from the hospital or clinic.

6 - Follow-up, both of the eye condition and of the syphilitic condition.

7 - Indication of the disposition of the patient, including the department of the institution to which he was referred and other hospital, clinic or physician to which the patient might have been sent.

8 - The result of syphilitic treatment for the eye condition, with an indication of whether or not there was improvement in such condition.

These are among the outstanding matters which should receive attention in an eye clinic. As a matter of fact, these are the very things sought in this study, as is indicated by the form attached to this report. Unfortunately, in a large number of instances the records or survey forms could not be filled out properly because inadequate records made it impossible to obtain accurate or sufficient information.

Various other steps will be required in order to bring hospitals and clinics to a higher degree of service. This will necessitate a proper orientation on the part of hospital administrators, staff physicians and surgeons in given institutions, at least insofar as the problem of syphilis and its complications in eye diseases are concerned. Once this orientation takes place, it may be assumed that, with some stimulus from an active professional committee with an interest in this problem, much will be accomplished.

Social service has long been recognized as a need for certain types of eye conditions. Unfortunately, there has not always been available the necessary financial support or the staff to provide for this service on an adequate basis. Perhaps, as a result of the preceding pages, it may be possible to impress both lay and professional people with the necessity, from the point of view of the community welfare, for adequate social service for certain types of eye diseases.

One important factor that must not be overlooked is that of the physician who serves in eye clinics. It has been suggested that if service in clinics were made more worthwhile to the physician, better results might be obtained. Further, serious consideration should be given to the advisability and desirability of paying physicians in eye clinics. There are a number of sound reasons why this should be done.

This report is considered to be but the first stage of a continuous analysis of methods followed in treating eye diseases complicated or caused by syphilis. Many additional procedures will have to be taken if the problem is to be met adequately within the next few years. It is likewise hoped that not only will this memorandum serve as a stimulus in New York City, but that out of it may grow similar efforts in other communities to analyze their local situations and to take necessary and

constructive steps leading to the proper care of patients who have an eye lesion.

The hope is expressed that, before long, steps will be taken to institute adequate preventive measures for syphilitic patients, so that ultimate catastrophes and a large loss in effective human beings and financial obligations to communities may be avoided through the prevention of total or partial blindness.

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VI -SURVEY FORM (Exhibit A)

1 - Case No.__________Age______ W( ), N( ), S( ), M( ), W( ), D( ).

II - Hospital Patient_____Clinic Patient____Both____Date Admitted__________

III - Personal History:
Syphilis: Genital Lesions________Skin Lesions________Ulcers__________
Treatment: Where____________________________________Began__________
How Many Courses:__________________Drugs__________________
Under Treatment at Present?________________________________
Stillbirths?____

IV - Family History:
(a) Syphilis in Father________Mother_______Patient's Children________
(b) History of Locomotor Ataxia____________General Paralysis________
(c) Cause of Death of Father_______________Mother_________________
(d) Brothers______________________________Sisters_________________
(e) Children____

V - Clinic Findings:
Tabes Dorsalis (locomotor ataxia ( ); Dementia Paralytica (general paralysis of insane( ); Taboparesis( ); Meningo-vascular syphilis( ); congenital syphilis( ); gumma( ); other-

VI - Laboratory:
Wassermann( ); Kahn( ); Negative( ); Doubt.( ); Pos.( ).
Spinal Fluid-Colloidal Gold_________ Neg.( ); Doubt.( ); Pos.( ).
Darkfield: Neg.( ); Pos.( ).
Other serology tests______________________________________

VII - Syphilitic Manifestations in Eye:
Iritis( ); Iridocyclitis( ); Retinitis( ); Papillitis( ); Choroiditis( ); Optic Atrophy( ); Any Ophthalmoplegia( ); Argyll Robertson Pupil( ); Interstitial Keratitis( ).
Other:

VIII - Diagnosis: On admission___________________On discharge______________

IX - Follow-up:
(a) for eye:____
(b) for syphilis:____

X - Disposition of Case:
(a) Treated in hospital-clinic( ) Department______________________
(b) Referred to:____

XI - Result of Syphilis Treatment on Eye Condition: (a) Improvement( ); (b) No improvement( ).
(c) Remarks______________________________

XII - Summary:

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